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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/275,766	03/25/1999	JOHN CHRISTIAN HERMANSEN	20837-007	1175

29315 7590 07/02/2002

MINTZ LEVIN COHN FERRIS GLOVSKY AND POPEO PC  
ONE FOUNTAIN SQUARE  
11911 FREEDOM DRIVE, SUITE 400  
RESTON, VA 20190

EXAMINER

HWANG, JOON H

ART UNIT PAPER NUMBER

2172

DATE MAILED: 07/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/275,766

Applicant(s)

HERMANSEN ET AL.

Examiner

Joon H. Hwang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13, 16.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicants amended claims 1, 2, 4, 7, 10, and 13-17 in the amendment received on 4/22/02.

The objections to the drawing are withdrawn.

The applicants define the term "entity" in the claims as "something that exists as a particular and discrete unit" according to Webster's II New College Dictionary, 1995.

The pending claims are 1-19.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 4, 7, 8, 10, 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley et al. (U.S. Patent No. 5,212,730) in view of Hermansen ("Automatic Name Searching in Large Data Bases of International Names," 1985, also described in lines 6-10 on page 5 in the specification).

With respect to claims 1, 2, 7, 13, and 14, Wheatley discloses a database (abstract and fig. 1) containing records including phonetic representations of names (HMM recognition model database, lines 3-68 in col. 4) for matching a proper input name, which is inputted as a string of characters (lines 23-25 and line 15 in col. 2 and lines 29-34 in col. 8). Wheatley discloses generating a phonetic feature sequence (phonetic alphabet representation, lines 21-25 in co. 4), which is equivalent to at least a portion of the input proper name. Further, Wheatley discloses generating an input

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name to speech signal (lines 29-41 in col. 8). The speech signal teaches a phonetic representation of the input name. Thus, Wheatley discloses generating a phonetic representation of the input name. Wheatley discloses comparing the input proper name and phonetic feature representations (lines 44-47 in col. 8, lines 30-38 in col. 2, and lines 16-20 in col. 10) and eliminating potential matching records that fall below a predetermined threshold (lines 40-43 in col. 9 and lines 60-68 in col. 2). Wheatley discloses generating proper names in the database to a number of phonetic feature representations (lines 44-60 in col. 8). Wheatley is silent on processing the records remaining after the eliminating step and receiving data represent the input proper name as a string of characters. However, Hermansen discloses presenting a list of search results (lines 19-23 on page 5), which teaches the processing the records. Wheatley also further discloses a pattern matching and a selection of matching records for the input proper name (abstract). Hermansen discloses searching a database by using strings of characters (lines 5-11 on page 9). Hermansen also discloses entering a name as a query (lines 1-7 on page 117). Theses teach receiving an input name as a string of characters. Therefore, based on Wheatley in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to receive an input name as a string of characters for the discretion of a user and to process records after the eliminating step in order to find closer matching records for the input proper name.

With respect to claim 8, Wheatley discloses the claimed subject matter as discussed above except processing records after an eliminating step with an algorithm.

Hermansen discloses searching names using algorithms (lines 16-19 on page 64). Therefore, based on Wheatley in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the algorithms of Hermansen to the system of Wheatley in order to find closer and more accurate matching records for an input proper name.

With respect to claims 4, 10, and 16, Wheatley discloses the claimed subject matter as discussed above except a further step of processing based on an algorithm of likely ethnic origin for an input proper name. Hermansen discloses searching using different culturally specific algorithms (line 9 on page 5 in the specification, lines 16-19 page 64, lines 2-23 on page 74, and lines 4-8 on page 81). Therefore, based on Wheatley in view of Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize culturally specific algorithms of Hermansen to the system of Wheatley in order to have more precise phonetic representations for comparison, thus closer matching records for the input proper name can be obtained or resulted.

4. Claims 3, 9, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley et al. (U.S. Patent No. 5,212,730) in view of Lutz ("The Use of Phonological Information in Automatic Name Searching, March 25, 1997, described in Appendix F in the specification).

With respect to claims 3, 9, and 15, Wheatley discloses the claimed subject matter as discussed above except a phonetic representation in International Phonetic Alphabet (IPA). Wheatley further discloses that other pronunciation representation

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could be used (lines 21-25 in col. 4) for a phonetic representation. Lutz discloses an automatic name searching using IPA (Section 5.0 on pages 6-7 in Appendix F) for representing pronunciation effectively. Therefore, based on Wheatley in view of Lutz, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a phonetic representation in IPA for the effective pronunciation representation.

5. Claims 5-6, 11-12, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheatley in view of Hermansen as applied to claim 10 above, and further in view of PC-NAS (the applicants' admitted prior art that is known more than one year before the priority date of this application, 09/275,766, in lines 11-17 on page 5 in the specification).

With respect to claims 5-6, 11-12, and 17-18, Wheatley and Hermansen disclose the claimed subject matter as discussed above except comparing and ignoring different portions of pronunciation equivalent phonetic alphabet representation of an input proper name. However, PC-NAS discloses name searching using a combination of n-gram and positional properties and a limited name regularization algorithm (lines 13-16 on page 5 in the specification). This teaches comparing and ignoring portions of phonetic representation in comparison for the name searching. Therefore, based on Wheatley in view of Hermansen, and further in view of PC-NAS, it would have been obvious to one having ordinary skill in the art at the time the invention was made to compare and ignore portions of phonetic representation of the input proper name for effective phonetic representation comparison.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hermansen ("Automatic Name Searching in Large Data Bases of International Names," 1985, also described in lines 6-10 on page 5 in the specification).

With respect to claim 19, Hermansen discloses identifying surname and given name that are part of an input proper name (lines 1-18 on page 35, lines 20-23 on page 63, line 1 on page 64, and lines 9-14 on page 80). Hermansen discloses determining the cultural origin or ethnicity of the inputted proper name (lines 18-23 on page 74, lines 21-23 on page 80, and lines 1-8 on page 81). Hermansen discloses selecting a search strategy based on the cultural origin of the input name (lines 7-10 on page 35, lines 16-19 on page 64, lines 18-23 on page 74, and lines 4-8 on page 81). Hermansen discloses selecting a set of names that are stored in the database (lines 18-20 on page 20). Hermansen discloses using an algorithm tailored to evaluate which of the selected names match the proper name (lines 19-20 on page 35, lines 16-23 on page 45, lines 1-5 on page 54, and lines 8-20 on page 118). Hermansen is silent on selecting a set of names that are stored in the databases based on a culture-relevant key-indexing strategy. However, Hermansen discloses a cultural key-indexing element (lines 4-7 on page 7, lines 6-13 on page 19, lines 1-3 on page 22, and lines 1-9 in col. 37).

Therefore, based on Hermansen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a set of names in the databases based on the determined cultural origin of the input name in order to search matching names efficiently and effectively.

***Response to Arguments***

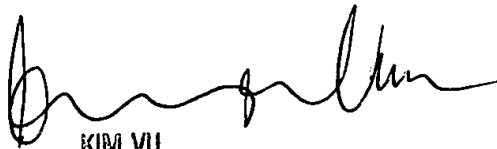
7. Applicant's arguments with respect to claims 1, 7, 13, and 19 have been considered but are moot in view of the new ground(s) of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joon H. Hwang whose telephone number is 703-305-6469. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on 703-305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5397 for regular communications and 703-308-5397 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Joon Hwang  
June 30, 2002



KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100